REPORT No. 7

Primary and Secondary School Teachers' Salaries in Ontario: A Public/Private Sector Comparison

Douglas Auld and Harry Kitchen, 1988

Public Sector Pensions Consultations

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PRIMARY AND SECONDARY TEACHERS SALARIES IN ONTARIO: A PUBLIC/PRIVATE SECTOR COMPARISON

In a perfectly competitive labour market, the equilibrium wage rate, for any occupational group, will be determined by the forces of demand and supply, reflecting relative scarcity and the embodied value of labour for that group in the production of goods and/or services. While fluctuations in demand and supply will cause real wages to rise or fall, sometimes rapidly, the long term trend in wages, in competitive markets, will be determined by changes in the intrinsic characteristics of labour in a given occupation, representing equilibrium differentials.

There are, however, few perfectly competitive labour markets in the world. In Ontario, competitive markets have, in many instances, been replaced by a market structure more characteristically described as bilateral monopoly; an employer negotiating with a union or an employer's group negotiating with a union. There are, of course, exceptions. Casual workers, unskilled labour and independent professionals such as business executives tend to be part of competitive labour markets. Even in professional areas (doctors, lawyers, dentists, for example), there is a tendency for self-regulation of fees or regulation by a government agency.

In spite of the many non-competitive elements in labour

markets, the question remains as to whether or not there are any long term trends, both in absolute real incomes/salaries and relative salaries that suggest the existence of some underlying competitive forces or forces similar to competition? The question as to whether or not public sector wage determination is influenced by the same set of factors as in the private sector is dealt with in Auld and Wilton (1981) and Auld, et. al. (1981)_.

The purpose of this paper is to examine trends in the salaries/wages of Ontario elementary and secondary teachers and of education 'workers' more broadly defined (including college teachers and university professors).

Any analysis of wage rates, salaries or total compensation packages or rates of change in the foregoing that attempts to draw comparisons among or between employment groups must consider the following:

i) the time period included in the analysis

ii) the nature of the comparative reference groups

iii) changes, over time, in the characteristics of the employment groups

iv) the stability of labour market conditions, in general and for specific groups

v) the sector (public or private) to which the groups are allocated

Discussion in this report revolves around the level and growth in the salaries of Ontario's primary and secondary school teachers salaries. This discussion concentrates on

the changes that have occurred in the absolute level of teachers' salaries over the past few years and makes some comparisons of these salaries with salary/income levels in other parts of the public sector and in selected professional groups in the private sector. As well, some suggestions on the forces that may have been working to alter the relative private and public sector incomes and wages will be offered.

The report is divided into six sections. Following this introduction, part II examines the trend in Ontario teachers and professors salaries for various years, 1966-1985, using Taxation Statistics and comparing these changes to the salaries of other public sector workers and several professional groups. Part III reviews trends in base wage rate increases for education workers in Ontario as reflected in collective agreements and compares this data with several other public sector groups and the private sector (in total).

Part IV compares elementary and secondary teachers salaries in Ontario with similar salaries in all of Canada and other education workers in Ontario; university professors and college teaching masters. Part V provides a summary of the data and in Part VI we conclude with some thoughts on the forces shaping these trends.

PART II: EVIDENCE FROM TAXATION STATISTICS

Revenue Canada collects detailed information on the sources of income from over one dozen employment groups including what have been categorized, in this paper, as public sector employees and private sector professionals. One of the groups is teachers and professors. This includes elementary and secondary school teachers as well as College and University faculty from both the public and private sectors with the former dominating the data. While the data are not published on a provincial basis, the Ontario data set was made available through a special printout. A comparison of relative incomes for Canada, as a whole, is found in Auld and Kitchen (forthcoming, 1988).

Table II-1 lists the average annual salary (or income from professional activity) for nine employment groups for selected years from 1966 to 1985 (1985 is the last year for which data are available). Earlier data are available in Auld and Grant (1977). While the absolute level of salaries differs for the various groups in each of the years, average annual earnings for teachers/professors increased by a factor of 6.1 over this period. Comparable factor increases for the other categories ranged from 5.6 for Federal employees to 1.8 for engineers and architects.

Table II-2 converts the data from Table II-1 into constant dollars (using the Consumer Price Index for Canada in 1981 dollars). In real terms, teachers/professors average

annual earnings grew by a factor of 1.7 while at the other end of the scale, similar earnings for lawyers and engineers and architects declined over this period.

Table II-3 provides data on the annual percentage change in reported earnings along with the overall annual average for the 20 year period. From this table, it is apparent that the teacher/professor group, as a whole, obtained larger increases than any of the other professional groups in the comparative data set. In fact, the average annual increase over the twenty years approached 10 percent. Federal public sector employees have performed almost as well, with dentists, municipal employees and doctors slightly behind.

Table II-4 is perhaps the simplest way of comparing relative salaries. Each element in the matrix represents the ratio of the average elementary or secondary teacher/professor salary, for that year, to the average salary of each of the nine groups. These results are illustrated more clearly in Figures II-1 and II-2. They reveal the significant gains made by the teacher/professor group, as a whole, relative to municipal and provincial employees (Figure II-1) and to engineers/architects and lawyers.

Finally, Figures II-3 and II-4 illustrate the cumulative increase in both real and nominal annual salaries over the 20 year period. These numbers simply reinforce, in a different way, the data in Table II-3.

TABLE II-1

Average Salary by Profession, Selected Years, 1966-85

Year	Teachers & Professor	Federal Govt Employees	Prov. Govt Employees	Municip. Govt Employees	Account.	Doctors	Dentists	Lawyers	Engineers & Architects
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1966	5819	5257	5067	4778	13968	25274	17384	22140	18704
1968	7092	5974	5940	5682	16689	30263	20446	24883	19971
1970	8398	7278	7193	6597	20837	35984	23580	29315	19293
1973	10419	8971	9219	7984	28461	38964	30424	37020	22434
1976	16161	13119	13065	11354	36725	42212	43511	41444	23782
1978	19146	16109	15591	12772	33599	49703	48341	38171	22539
1979	21899	17500	16199	13520	35316	54085	52729	42418	19343
1980	24127	19345	18116	14774	38560	58944	55753	41581	25516
1982	30673	25069	23095	18498	44989	75357	68734	56958	30086
1983	32461	26586	21712	19141	48778	85166	79479	54564	32758
1984	34132	27840	23396	22027	58902	91316	80577	61870	34694
1985	35435	29380	25185	23473	57884	101320	87438	62454	32902

*Gross professional income was reported for Doctors, Dentists, Lawyers, Engineers & Architects for 1966, 1968 & 1970 and net income was reported for the same groups for the remaining years.

SOURCE: Calculated from Special Printouts of Table 3 of Taxation Statistics for Ontario (selected years), Revenue Canada, Ottawa. June 1988.

TABLE II-2

Average Salary by Profession, Selected Years, 1966-1985
(Constant Dollars -- 1981=100)

Year	Teachers & Professor	Federal Govt Employees	Prov. Govt Employees	Municip. Govt Employee	Account.	Doctors	Dentists	Lawyers	Engineers & Architects
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1966	16531	14935	14395	13574	39682	71801	49386	62898	53136
1968	18663	15721	15632	14953	43918	79639	53805	65482	52555
1970	20483	17751	17544	16090	50822	87766	57512	71500	47056
1973	21889	18847	19368	16773	59792	81857	63916	77773	47130
1976	25693	20857	20771	18051	58386	67110	69175	65889	37809
1978	25908	21798	21097	17283	45465	67257	65414	51652	30499
1979	27136	21685	20073	16753	43762	67020	65340	52563	23969
1980	27139	21760	20378	16619	43375	66304	62714	46773	28702
1982	27683	22625	20844	16695	40604	68012	62034	51406	27153
1983	27697	22684	18526	16332	41619	72667	67815	46556	27951
1984	27908	22764	19130	18011	48162	74666	65885	50589	28368
1985	27880	23116	19815	18468	45542	79717	68795	49138	25887

*Gross professional income was reported for Doctors, Dentists, Lawyers, Engineers & Architects for 1966, 1968 & 1970 and net income was reported for the same groups for the remaining years.

SOURCE: Calculated from Special Printouts of Table 3 of Taxation Statistics for Ontario (selected years), Revenue Canada, Ottawa, June 1988. The numbers were deflated by the Consumer Price Index (taken from the Quarterly Economic Review, Reference Table 41, Department of Finance, Ottawa, June 1987) for Canada.

TABLE II-3

Annualized Percentage Increase in Salaries By Profession, 1968 to 1985

Year	Tea/Prof Annual % age Increase	Fed Annual % age Increase	Prov. Annual % age Increase	Mun. Annual % age Increase	Account. Annual % age Increase	Doctors Annual % age Increase	Dentists Annual % age Increase	Lawyers Annual % age Increase	Eng & Arc Annual % age Increase
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1966									
1968	10.94	6.82	8.61	9.46	9.74	9.87	8.81	6.19	3.39
1970	9.21	10.91	10.55	8.05	12.43	9.45	7.66	8.91	-1.70
1973	8.02	7.75	9.39	7.01	12.20	2.76	9.67	8.76	5.43
1976	18.37	15.41	13.91	14.07	9.68	2.78	14.34	3.98	2.00
1978	9.24	11.40	9.67	6.24	-4.26	8.87	5.55	-3.95	-2.61
1979	14.38	8.63	3.90	5.86	5.11	8.82	9.08	11.13	-14.18
1980	10.17	10.54	11.83	9.28	9.19	8.98	5.73	-1.97	31.91
1982	13.57	14.79	13.74	12.60	8.34	13.92	11.64	18.49	8.96
1983	5.83	6.05	-5.99	3.48	8.42	13.02	15.63	-4.20	8.88
1984	5.15	4.72	7.76	15.08	20.76	7.22	1.38	13.39	5.91
1985	3.82	5.53	7.65	6.56	-1.73	10.96	8.51	0.94	-5.17
Avg.	9.88	9.32	8.27	8.88	8.17	8.79	8.91	5.61	3.89

NOTE: The increases reported in this table record the average annual increase; for example, the figure reported opposite the year 1973 indicates the average annual increase from 1970 to 1973.

SOURCE: Calculated from Special Printouts of Table 3 of Taxation Statistics for Ontario, Revenue Canada, Ottawa, June 1988.

TABLE II-4

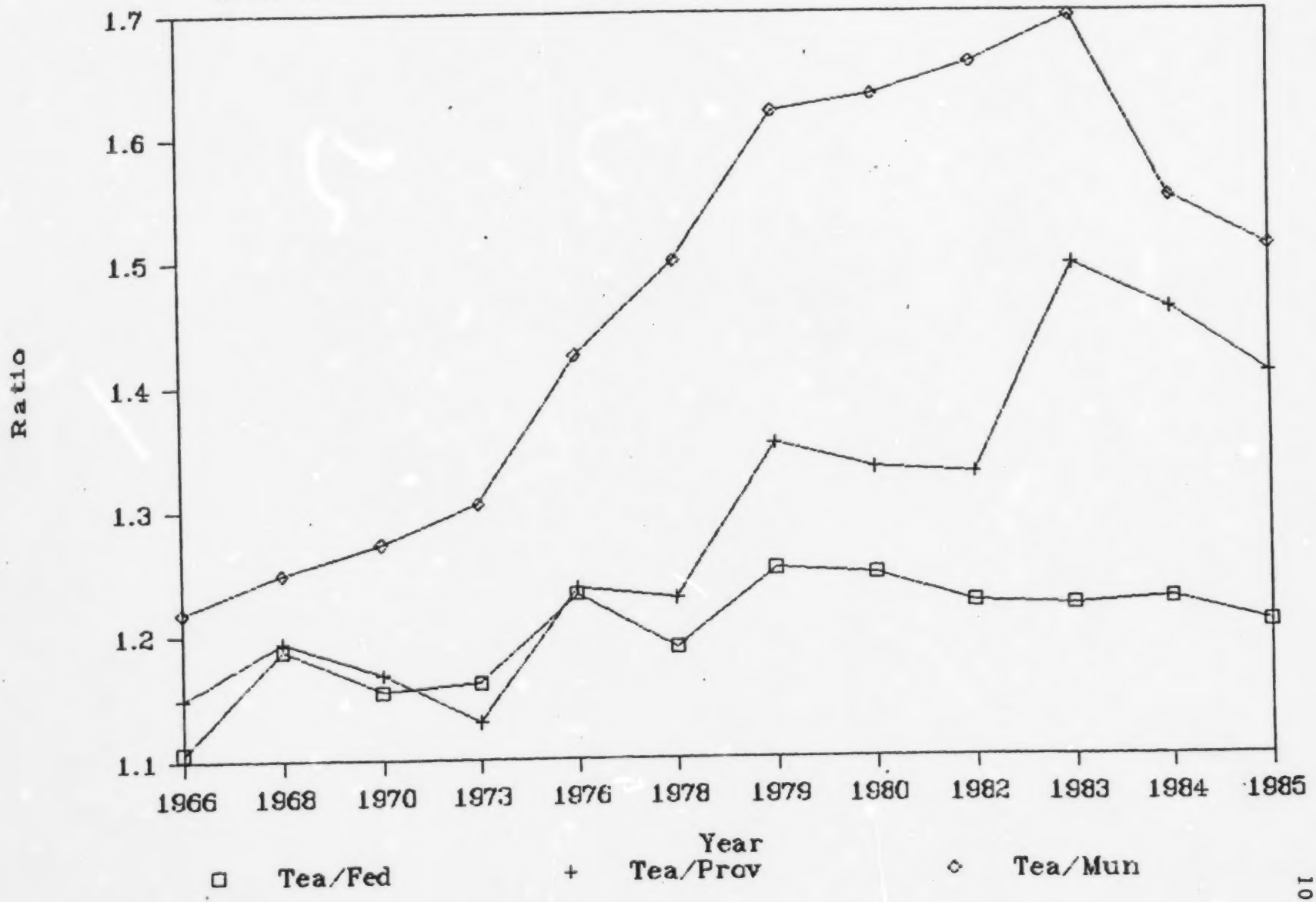
Ratio of Teachers/Professors Average Annual Salaries to Selected Professions, selected Years, 1966-1985

Year	Teachers div. by Fed. Emp.	Teachers div. by Prov. Emp.	Teachers div. by Mun. Emp.	Teachers div. by Account.	Teachers div. by Doctors	Teachers div. by Dentists	Teachers div. by Lawyers	Teachers div. by Eng & Arc
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1966	1.11	1.15	1.22	0.42	0.23	0.33	0.26	0.31
1968	1.19	1.19	1.25	0.42	0.23	0.35	0.29	0.36
1970	1.15	1.17	1.27	0.40	0.23	0.36	0.29	0.44
1973	1.16	1.13	1.30	0.37	0.27	0.34	0.28	0.46
1976	1.23	1.24	1.42	0.44	0.38	0.37	0.39	0.68
1978	1.19	1.23	1.50	0.57	0.39	0.40	0.50	0.85
1979	1.25	1.35	1.62	0.62	0.40	0.42	0.52	1.13
1980	1.25	1.33	1.63	0.63	0.41	0.43	0.58	0.95
1982	1.22	1.33	1.66	0.68	0.41	0.45	0.54	1.02
1983	1.22	1.50	1.70	0.67	0.38	0.41	0.59	0.99
1984	1.23	1.46	1.55	0.58	0.37	0.42	0.55	0.98
1985	1.21	1.41	1.51	0.61	0.35	0.41	0.57	1.08

SOURCE: Calculated from Data in Table II-1.

FIGURE II-1

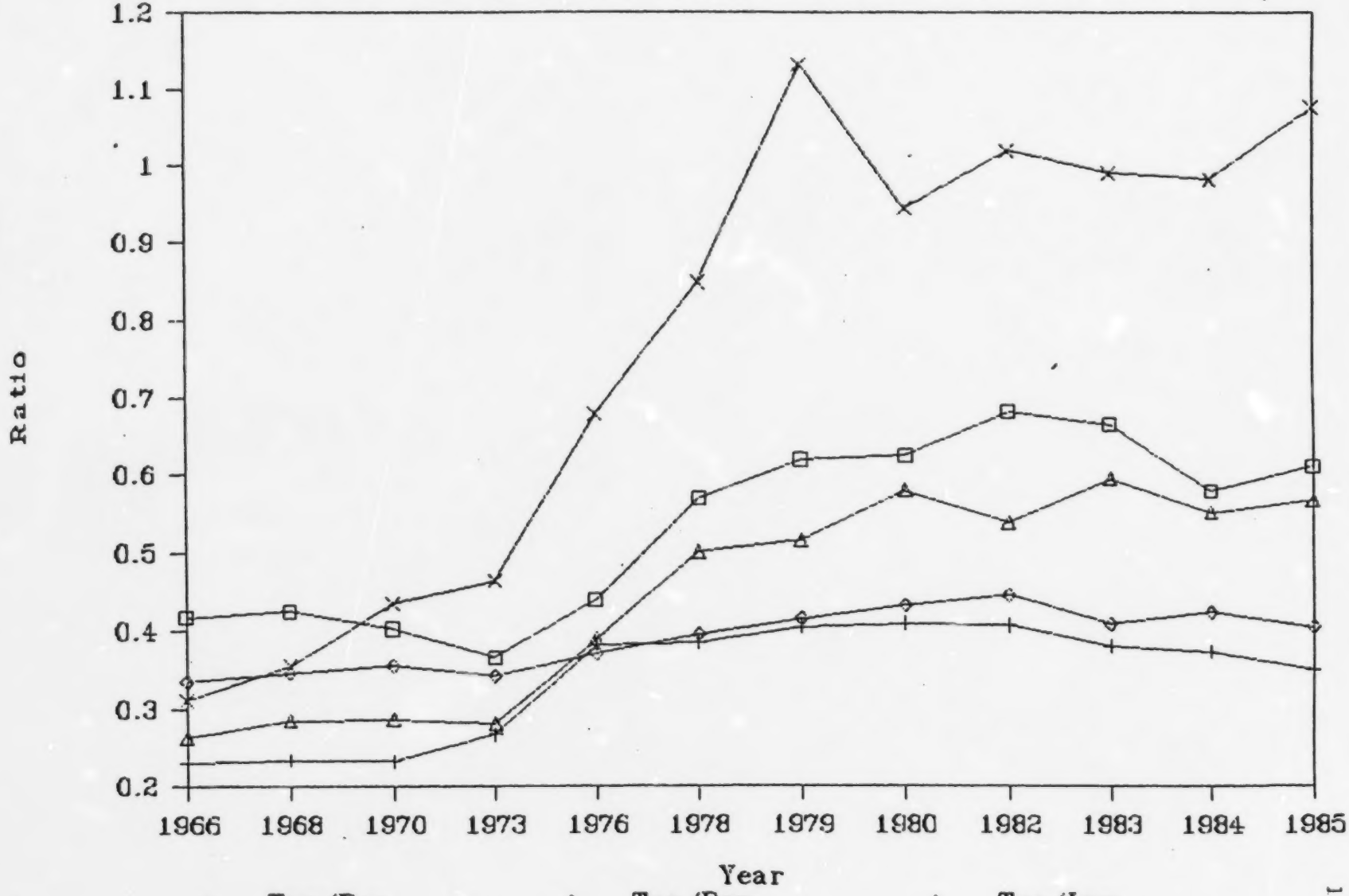
Ratio of Teacher/Professor Salaries to Government Employees, 1966-1985



Source: Columns 2, 3 and 4 of Table II-4.

FIGURE II-2

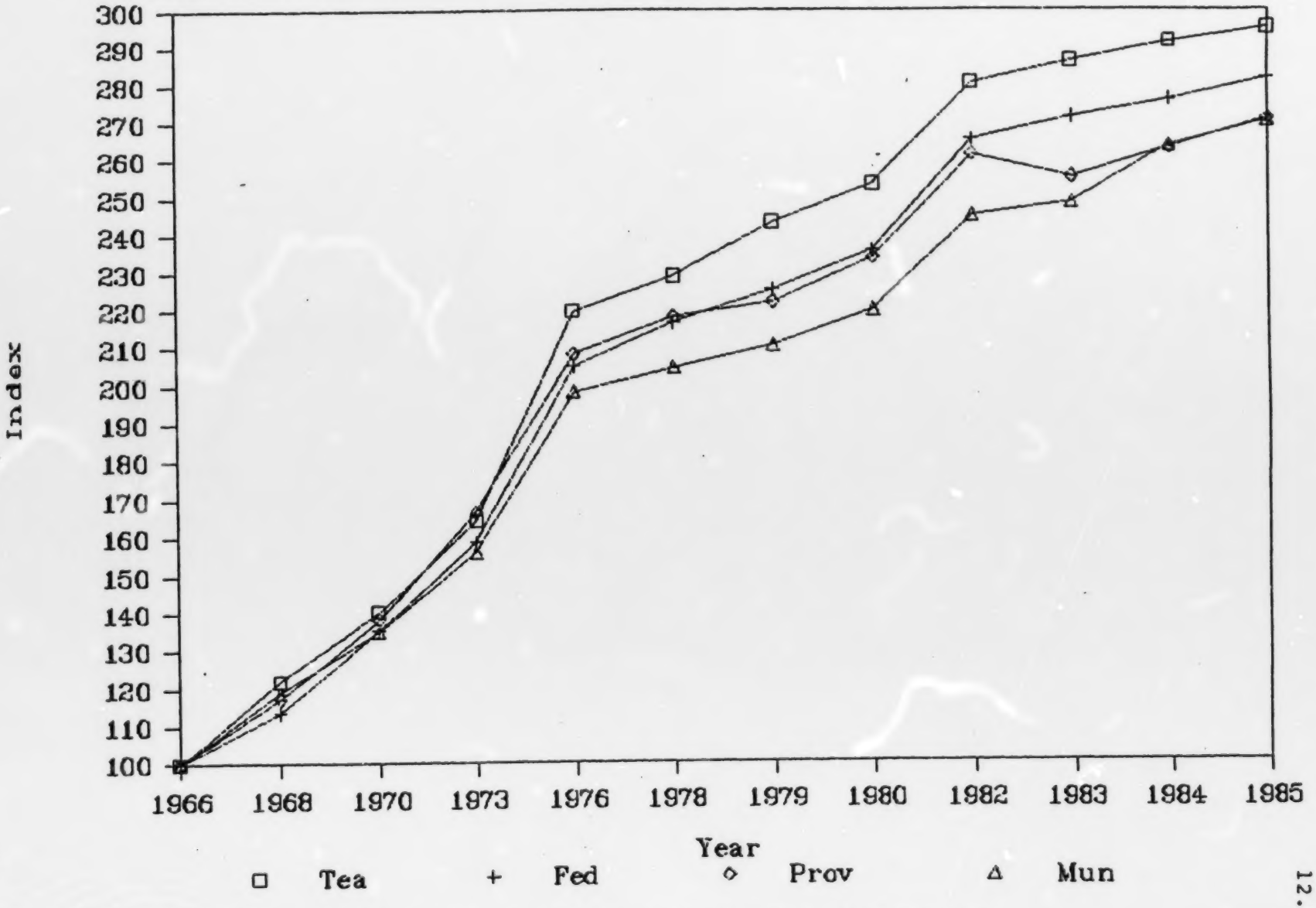
Ratio of Teacher/Professor Salaries to Private Sector Salaries



Source: Columns 5, 6, 7, 8 and 9 of Table II-4

F I G U R E II-3

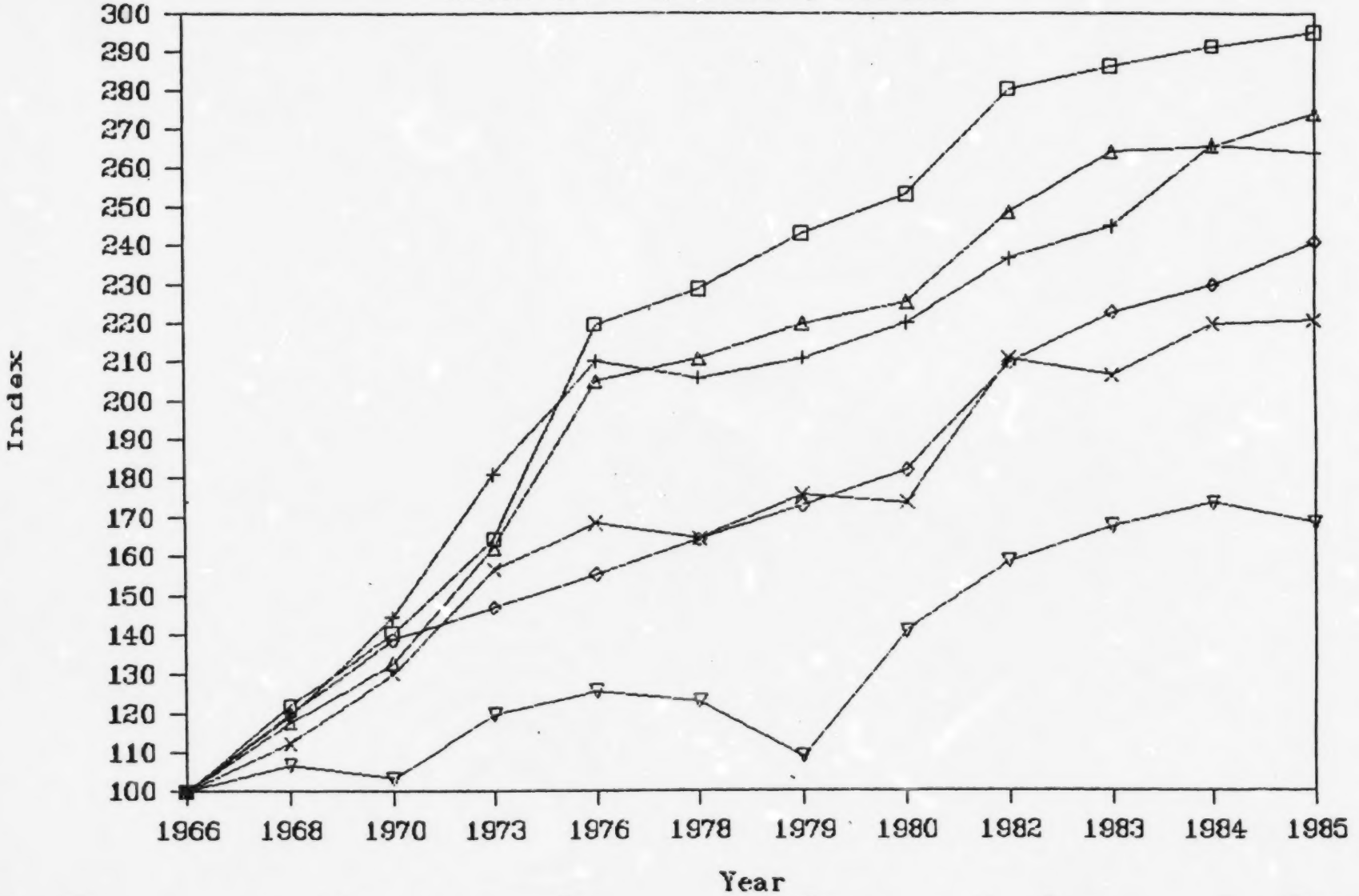
Cumulative Index of Increases in Salaries of Public Sector Employees 1966-1985



Source: Calculated from data in Columns 2, 3, 4 and 5 of Table II-3.

F I G U R E II-4

Cumulative Index of Increases in Teacher/Professor Salaries and Private Sector Professions, 1966-1985



Source: Calculated from data in Columns 2, 6, 7, 8, 9 and 10 of Table II-3.

PART III - DATA FROM COLLECTIVE BARGAINING AGREEMENTS IN ONTARIO

The Ontario Department of Labour collects and publishes detailed characteristics of all collective agreements involving 200 or more employees and has done so since the late 1960s. Unfortunately, elementary and secondary school teachers are not classified as a separate group but are included under the heading, Education, again encompassing all education workers whose employment contract is determined by collective bargaining. Elementary and secondary teachers are nonetheless, a significant part of this group. The basis for comparison, here, is the annual percentage base wage increase for education versus base wage increases for three other provincial public sector groups and the private sector, in total.

The data examined are extracted from one year collective bargaining agreements. While there is information on 2 and 3 year contracts, such contracts often include complex COLA (cost of living allowance) clauses making comparisons among groups very difficult. It should also be kept in mind that during the early 1980s, public sector wage controls suspended collective bargaining, producing gaps in the data (see Auld and Wilton, 1985).

Table III-1 displays the basic data, clearly highlighting the explosive nominal wage increases in the 1974-75 period and again in 1981-82. After adjusting for inflationary increases in each year, these dramatic nominal

gains are somewhat less spectacular. Over the twenty year period, the annual average wage increase for education was 8.27 per cent in nominal terms and 1.34 percent in real terms. This was the second lowest real increase for the five groups recorded in Table III-1. The largest average annual gain was in the health sector (10.27 percent in nominal terms and 3.34 percent in real terms). The smallest gain was in the local sector (8.15 percent nominal gain and 1.22 percent real gain). Before making quick comparisons and statements on the information in this Table, it must be remembered that base wage rate changes do not include gains received for merit, promotion or 'moving' through a grid scale of salary levels. The taxation data (PART II) revealed that over the same period (approximately), the average annual increase in nominal income was 9.88 per cent. The 1.61 difference can likely, therefore, be attributed to "progress through the ranks" and other characteristics of wage contracts.

The annual percentage increases of Table III-1 are converted into an index (with 1968-100) and shown in Table III-2 and Figures III-1 and III-2. The trends suggest that the education sector has not "out performed" other groups in salary increases. In fact, in relationship to the private sector, the index shows that from 1968 to 1987, the education sector fell 6.6 percentage points behind the private sector.

TABLE III-1

Annual Percentage Change in Base Wage Rates For One Year Contracts, Public and Private Sector (nominal and real increrase)

Year	Education nominal	Education real	Health nominal	Health real	Province nominal	Province real	Local nominal	Local real	Private nominal	Private real
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1968	8.1	4.1	11.8	7.8	0	-4	7.7	3.7	8.3	4.3
1969	9.5	5	10.6	6.1	10.8	6.3	13.6	9.1	8.8	4.3
1970	9.6	6.2	9.5	6.1	7.5	4.1	9.4	6	8.1	4.7
1971	8.2	5.4	11.7	8.9	7.6	4.8	8.2	5.4	8.2	5.4
1972	7	2.2	8.7	3.9	7.7	2.9	7.3	2.5	8.1	3.3
1973	8.8	1.2	11.8	4.2	8.6	1	8	0.4	10	2.4
1974	10.5	-0.4	26.9	16	14.8	3.9	11.2	0.3	15.8	4.9
1975	18.7	7.9	25.7	14.9	18.9	8.1	15.7	4.9	15.6	4.8
1976	12.2	4.7	10	2.5	13.6	6.1	10.2	2.7	12.6	5.1
1977	7.1	-0.9	6.2	-1.8	8.8	0.8	7.4	-0.6	8	0
1978	5.7	-3.2	5.2	-3.7	6.3	-2.6	5.8	-3.1	6.8	-2.1
1979	7.8	-1.4	4.7	-4.5	8.1	-1.1	8.8	-0.4	8	-1.2
1980	8.6	-1.6	14.8	4.6	10.8	0.6	10.2	0	10	-0.2
1981	12.3	-0.2	21.6	9.1	13.7	1.2	12.7	0.2	13	0.5
1982	10.7	-0.1	10.9	0.1	13.8	3	10.8	0	10.6	-0.2
1983	5.9	0.1	6.3	0.5	6.8	1	5.5	-0.3	5.9	0.1
1984	0	-4.3	0	-4.3	0	-4.3	0	-4.3	2	-2.3
1985	4.8	0.8	0	-4	0	-4	0	-4	2.9	-1.1
1986	4.9	0.7	4	-0.2	5.5	1.3	5.7	1.5	4.9	0.7
1987	4.9	0.5	5	0.6	4.9	0.5	4.7	0.3	4.5	0.1
Av.	8.27	1.34	10.27	3.34	8.41	1.48	8.15	1.22	8.61	1.68

SOURCE: Calculated from data obtained from "Wage Developments in Collective Bargaining Settlements in Ontario", annual, prepared by the Industrial Relations Division, Ministry of Labour, Ontario. Increases in real terms were obtained by adjusting the nominal increase by the Consumer Price Index for Canada.

TABLE III-2

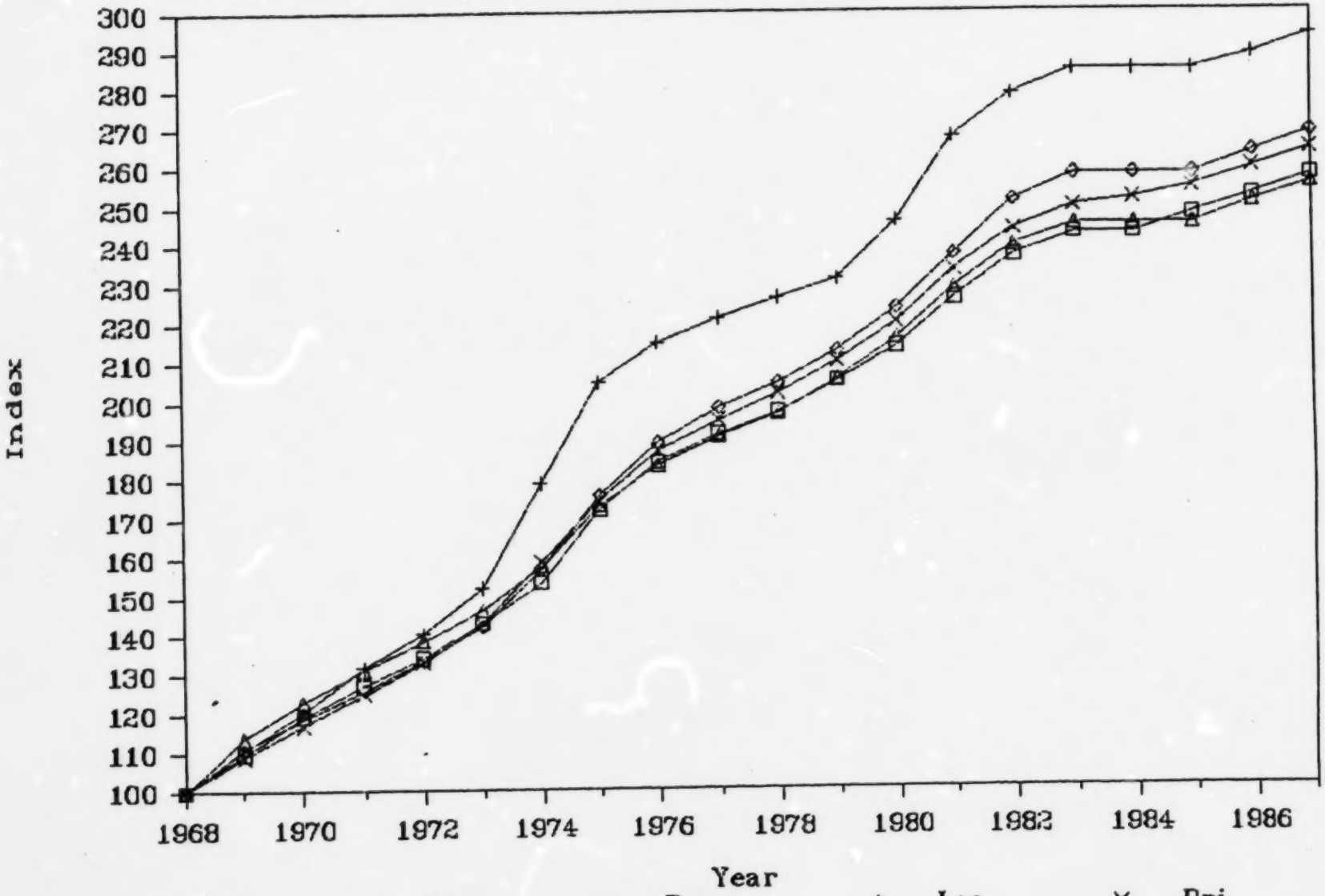
Cumulative Index of Annual Percentage Change in Base Wage Rates For One Year Contracts, Public and Private Sector (nominal and real increrase)

	Education		Health		Province		Local		Private	
Year	nominal	real	nominal	real	nominal	real	nominal	real	nominal	real
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1968	100	100	100	100	100	100	100	100	100	100
1969	109.5	105	110.6	106.1	110.8	106.3	113.6	109.1	108.8	104.3
1970	119.1	111.2	120.1	112.2	118.3	110.4	123	115.1	116.9	109
1971	127.3	116.6	131.8	121.1	125.9	115.2	131.2	120.5	125.1	114.4
1972	134.3	118.8	140.5	125	133.6	118.1	138.5	123	133.2	117.7
1973	143.1	120	152.3	129.2	142.2	119.1	146.5	123.4	143.2	120.1
1974	153.6	119.6	179.2	145.2	157	123	157.7	123.7	159	125
1975	172.3	127.5	204.9	160.1	175.9	131.1	173.4	128.6	174.6	129.8
1976	184.5	132.2	214.9	162.6	189.5	137.2	183.6	131.3	187.2	134.9
1977	191.6	131.3	221.1	160.8	198.3	138	191	130.7	195.2	134.9
1978	197.3	128.1	226.3	157.1	204.6	135.4	196.8	127.6	202	132.8
1979	205.1	126.7	231	152.6	212.7	134.3	205.6	127.2	210	131.6
1980	213.7	125.1	245.8	157.2	223.5	134.9	215.8	127.2	220	131.4
1981	226	124.9	267.4	166.3	237.2	136.1	228.5	127.4	233	131.9
1982	236.7	124.8	278.3	168.4	251	139.1	239.3	127.4	243.6	131.7
1983	242.6	124.9	284.6	166.9	257.8	140.1	244.8	127.1	249.5	131.8
1984	242.6	120.6	284.6	162.6	257.8	135.8	244.8	122.8	251.5	129.5
1985	247.4	121.4	284.6	158.6	257.8	131.8	244.8	118.8	254.4	128.4
1986	252.3	122.1	288.6	158.4	263.3	133.1	250.5	120.3	259.3	129.1
1987	257.2	122.6	293.6	159	268.2	133.6	255.2	120.6	263.8	129.2

SOURCE: Calculated from data in Table III-1.

FIGURE III-1

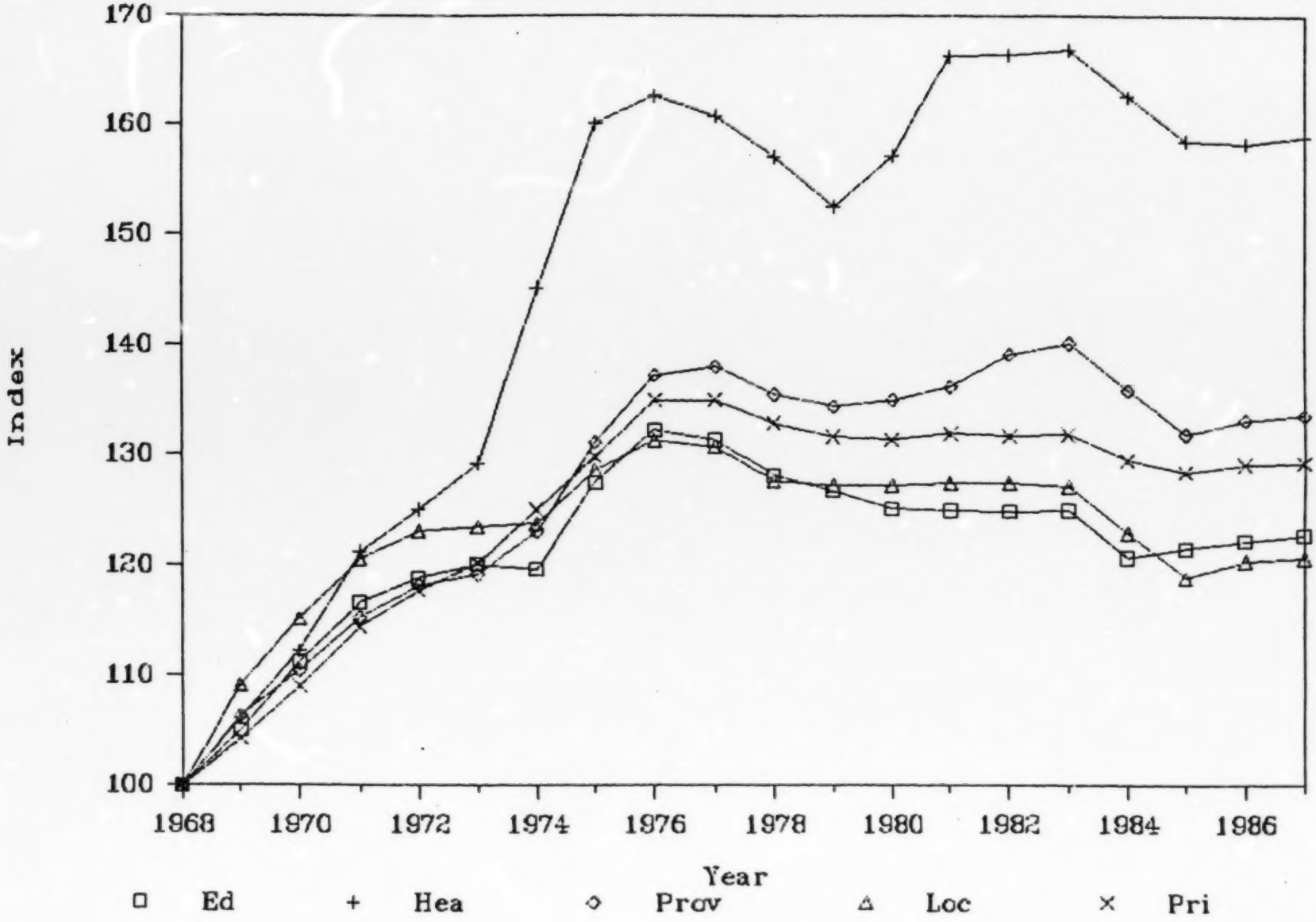
Index of Annual Base Wage Change by Sector, 1968-1987 (Nominal $)



Source: Table III-2

F I G U R E III-2

Index of Annual Base Wage Change by Sector (Real $)



Source: Table III-2

PART IV: STATISTICS CANADA DATA

While the data in PARTS II and III compared teaching salaries (University, Community College and elementary and secondary school teachers combined) with earnings for other selected professions, Table IV-1 records average annual salaries for each of the teaching components separately for the period from 1972/73 to 1987/88. For elementary teachers, the average annual salary at the beginning of this period was $8,834 per year; for secondary teachers, it was $11,602; for Community College teaching masters, the comparable figure was $9,176; and for University faculty, the average salary was $18,782. By 1987/88, the average elementary and secondary school teachers salary in Ontario had risen to $41,528 and $45,801 respectively. Comparable salaries for Community Colleges and Universities were $46,626 and $60,835 respectively (Table IV-1).

The increase in average salaries over this period was greatest for Teaching Masters in Community Colleges. More specifically, salaries, on average, increased by a factor of 5.1. By comparison, elementary school teachers salaries rose by a factor of 4.7 while secondary school teachers salaries increased by a factor of 3.9. University salaries grew by a factor of 3.2.

Table IV-2 converts the salary figures of Table IV-1 into constant dollars. After removing the inflationary component of salary increases (by deflating with the Consumer

Price Index for Canada), there is a considerably smaller increase for each category of teachers over the period.

Perhaps a more illustrative means of presenting information on comparative teaching salaries comes from a comparison of the change in the relative importance of the growth in elementary and secondary school teachers salaries vis-a-vis other teaching groups. Table IV-3 records these results while Figures IV-1 and IV-2 display them graphically. Figure IV-1 shows that elementary salaries have grown more quickly than University salaries from 1972/73 to 1987/88. Since 1975/76, the same trend is observed for Community College teaching masters. When the growth in elementary school salaries for Ontario and Canada are compared, there is no discernable change in the relative importance of Ontario elementary school teachers salaries.

Although the size of the absolute numbers differ, similar trends for secondary school teachers versus the other teaching groups are observed in Figure IV-2.

To gain some indication of the increase in salaries of the comparative groups from 1972/73 to the present, Table IV-4 records the annual percentage increase in earnings in both nominal and real terms. The average nominal and real increase over the fifteen year period was highest for Community College teaching masters and less, in descending order, for Canadian and Ontario elementary teachers, Canadian and Ontario secondary school teachers and University faculty

salaries (last row of Table IV-4). Figures IV-3 and IV-4 illustrate the results of the cumulative increase; that is, they represent the cumulative sum of the figures in Table IV-4 for the entire period. Both graphs generate similar trends; however, Figure IV-4 is probably more informative because it reflects the real increase in average earnings. In real terms, Community College salaries have displayed the greatest increase (58 percent). Next in line comes elementary salaries in Ontario (46 percent) and Canada; secondary salaries in both Ontario (26 percent) and Canada; and finally, University professors at 4 percent.

TABLE IV-1

Average Salaries - Teachers - Universities, Community Colleges, Elementary and Secondary Teachers, 1972/73 to 1987/88.

Year	Univ. Prof. Ontario	Com. Coll. Ontario	Elem. Teacher Ontario	Sec. teacher Ontario	Elem. Teacher Canada*	Sec. Teacher Canada*
72/73	18782	9176	8834	11602	8806	11107
73/74	19792	12377	9674	12596	9730	12097
74/75	21691	15968	11231	14268	11049	13451
75/76	24117	19197	12288	15809	12735	15515
76/77	26590	20961	15318	19253	15244	18294
77/78	28824	21814	17304	21040	17014	19978
78/79	30448	24047	18624	22692	18298	21433
79/80	32767	25130	20224	24863	20133	23600
80/81	35783	27886	23124	27385	22539	25900
81/82	39761	31898	26050	31673	25573	29924
82/83	44986	34891	29919	34139	29395	33276
83/84	47340	37752	33030	37539	32312	36199
84/85	49251	38790	33749	38469	33177	37326
85/86	52742	40184	36284	40843	35096	39175
86/87	56697	42630	39640	44024	n.a.	n.a.
87/88	60835	46626	41525	45801	n.a.	n.a.

* Alberta figures are included from 1972/73 to 1981/82 and excluded thereater.

SOURCE: Extracted from Statistics Canada publications, various years. Secondary School, Table 3, Statistics Canada, Ottawa.

T A B L E IV-2

Average Salaries, Univ., Comm. Coll., & Elem. & Sec. Teachers,
1972/73 to 1987/88
(constant dollars, 1981 = 100)

Year	Univ. Prof. Ontario	Com. Coll. Ontario	Elem. Teacher Ontario	Sec. teacher Ontario	Elem. Teacher Canada*	Sec. Teacher Canada*
72/73	39458	19277	18559	24374	18500	23334
73/74	37485	23441	18322	23856	18428	22911
74/75	37079	27296	19198	24390	18887	22993
75/76	38342	30520	19536	25134	20246	24666
76/77	39161	30870	22560	28355	22451	26943
77/78	39004	29518	23415	28471	23023	27034
78/79	37730	29798	23078	28119	22674	26559
79/80	36858	28268	22749	27967	22647	26547
80/81	35783	27886	23124	27385	22539	25900
81/82	35885	28780	23511	28586	23080	27007
82/83	38384	29770	25528	29129	25081	28392
83/84	38708	30868	27007	30694	26420	29599
84/85	38750	30519	26553	30267	26103	29367
85/86	39835	30350	27405	30848	26508	29588
86/87	41025	30847	28683	31855	n.a.	n.a.
87/88	42071	32245	28717	31674	n.a.	n.a.

* Alberta figures are included from 1972/73 to 1981/82 and excluded thereafter.

SOURCE: Figures from TABLE IV-1 adjusted by the Consumer Price Index for Canada.

Ratio of Average Annual Ontario Elementary & Secondary school Teachers Salaries To University Professors & Community College Salaries in Ontario and to Elementary and Secondary School Salaries in Canada, 72/73 to 87/88

TABLE IV-3

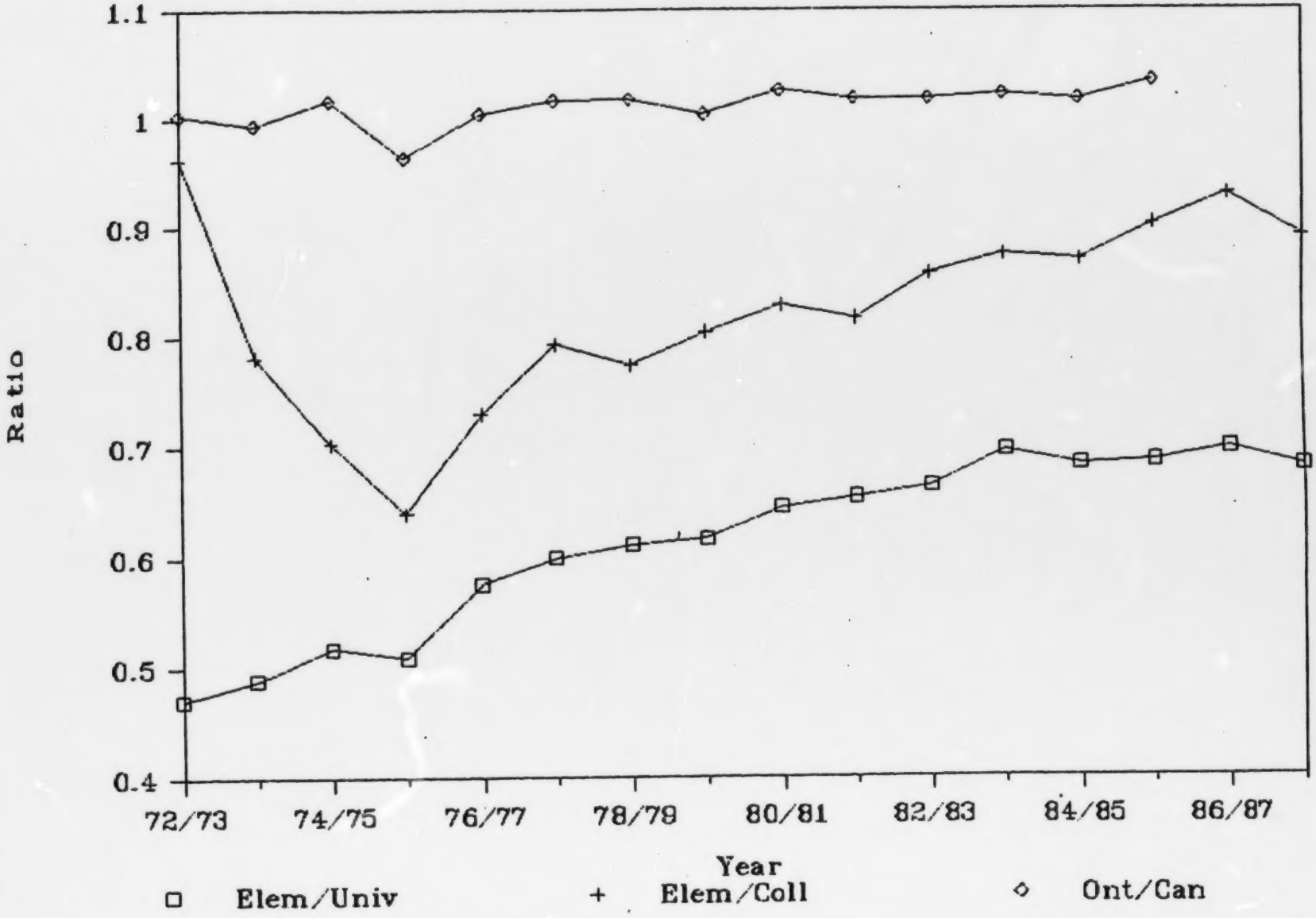
Year	Elem. div. Prof.	Elem. div. Coll.	Sec. div Prof.	Sec. div. Coll.	Sec. div. Elem.	Ont. div. by Can. elem.	Ont. div. by Can. sec.
72/73	0.47	0.96	0.62	1.26	1.31	1.00	1.04
73/74	0.49	0.78	0.64	1.02	1.30	0.99	1.04
74/75	0.5[illegible]	0.70	0.66	0.89	1.27	1.02	1.06
75/76	0.51	0.64	0.66	0.82	1.29	0.96	1.02
76/77	0.58	0.73	0.72	0.92	1.26	1.00	1.05
77/78	0.60	0.79	0.73	0.96	1.22	1.02	1.05
78/79	0.61	0.77	0.75	0.94	1.22	1.02	1.06
79/80	0.62	0.80	0.76	0.99	1.23	1.00	1.05
80/81	0.65	0.83	0.77	0.98	1.18	1.03	1.06
81/82	0.66	0.82	0.80	0.99	1.22	1.02	1.06
82/83	0.67	0.86	0.76	0.98	1.14	1.02	1.03
83/84	0.70	0.87	0.79	0.99	1.14	1.02	1.04
84/85	0.69	0.87	0.78	0.99	1.14	1.02	1.03
85/86	0.69	0.90	0.77	1.02	1.13	1.03	1.04
86/87	0.70	0.93	0.78	1.03	1.11		
87/88	0.68	0.89	0.75	0.98	1.10		

* Alberta figures are included from 1972/73 to 1981/82 and excluded thereafter.

SOURCE: Calculated from data in TABLE IV-1.

F I G U R E IV-1

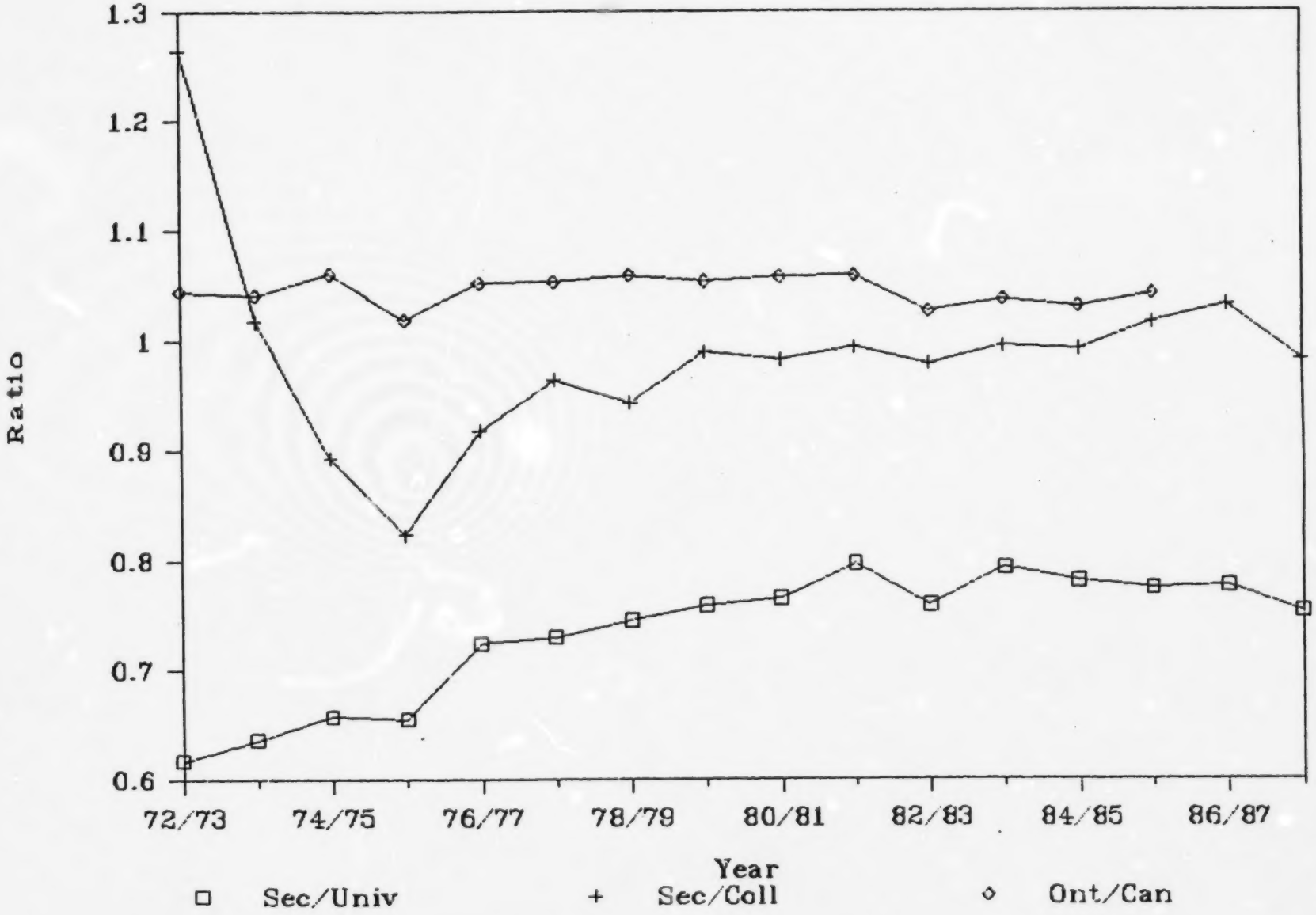
Ratio of Ont. Elem. Sal. to Ont. Univ., Ont. Coll. and Can. Elem.



Source: From Table IV-3

F I G U R E IV-2

Ratio of Ont. Sec. Sal. to Ont. Univ., Ont. Coll. and Can. Sec.



Source: From Table IV-3

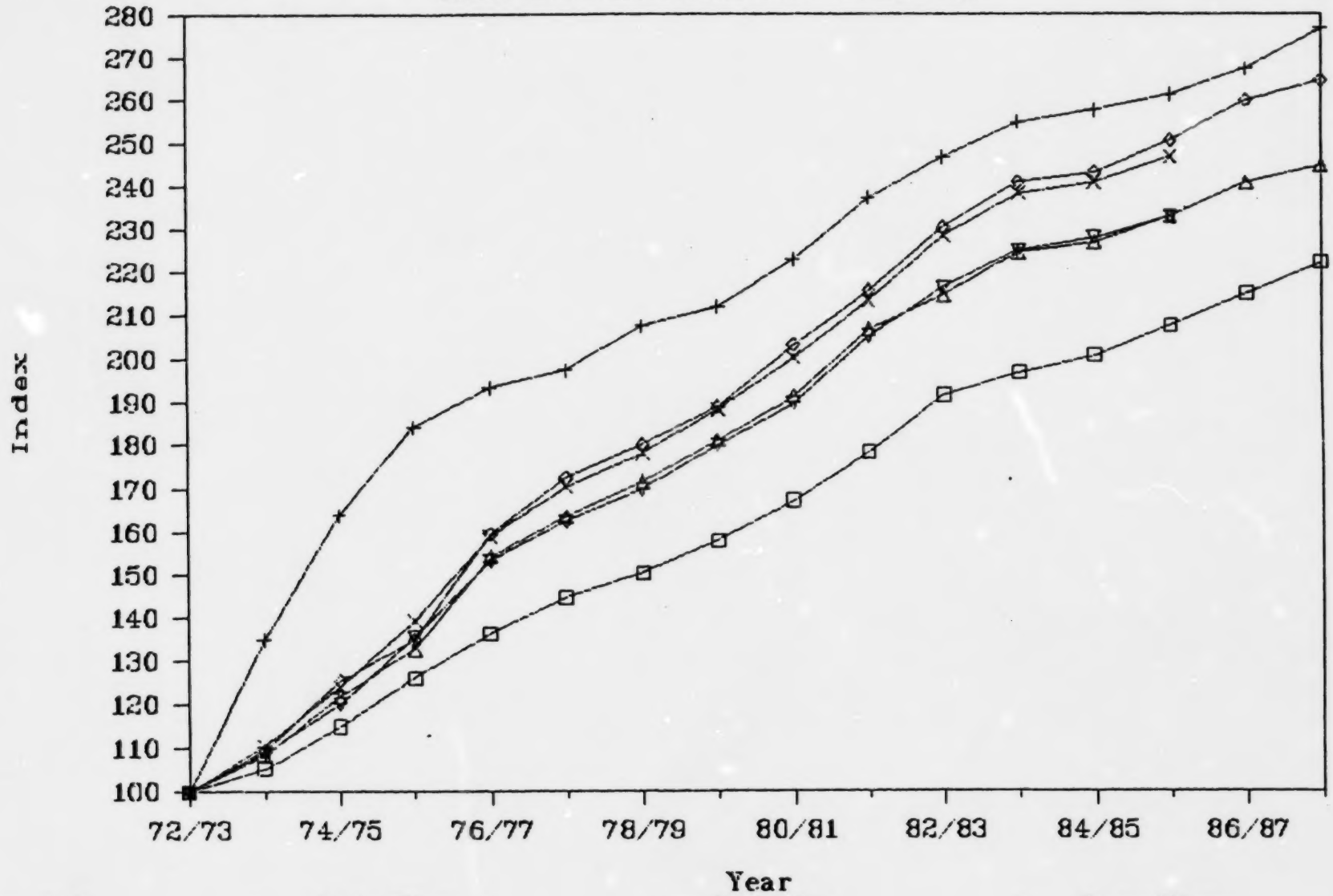
TABLE IV-4

Cumulative Index of Increase in Annual Average Earnings for Ontario University Professors, Ontario Community College Teachers, Ontario Elementary and Secondary Teachers, Canadian Elementary and Secondary Teachers, 1972/73 to 1987/88.

Year	Univ. Prof. nom. cum.	Univ. Prof. real cum.	Com. Coll. nom. cum.	Com. Coll. real cum.	Ont. Elem. nom. cum.	Ont. Elem. real cum.	Ont. Sec. nom. cum.	Ont. Sec. real cum.	Can. Elem. nom. cum.	Can. Elem. real cum.	Can. Sec. nom. cum.	Can. Sec. real cum.
72/73	100	100.0	100	100	100	100	100	100	100	100	100	100
73/74	105.4	97.8	134.9	127.2	109.5	101.9	108.6	100.9	110.5	102.8	108.9	101.3
74/75	115.0	96.5	163.9	145.3	125.6	107.1	121.8	103.3	124.1	105.5	120.1	101.6
75/76	126.2	96.9	184.1	154.8	135.0	105.7	132.6	103.3	139.3	110.0	135.5	106.1
76/77	136.4	99.6	193.3	156.5	159.7	122.8	154.4	117.6	159.1	122.2	153.4	116.5
77/78	144.8	100.0	197.4	152.5	172.6	127.8	163.7	118.9	170.6	125.8	162.6	117.7
78/79	150.4	96.7	207.6	153.9	180.3	126.5	171.6	117.8	176.2	124.4	169.9	116.1
79/80	158.1	95.2	212.1	149.2	188.9	125.9	181.1	118.2	188.2	125.3	180.0	117.0
80/81	167.3	94.2	223.1	149.9	203.2	130.1	191.3	118.1	200.2	127.0	189.7	116.6
81/82	178.4	92.8	237.4	151.8	215.9	130.2	206.9	121.3	213.6	128.0	205.2	119.6
82/83	191.5	95.1	246.9	150.4	230.7	134.3	214.7	118.3	228.6	132.1	216.4	120.0
83/84	196.8	94.5	255.1	152.8	241.1	138.9	224.7	122.4	238.5	136.2	225.2	123.0
84/85	200.8	94.3	257.8	151.3	243.3	136.7	227.2	120.6	241.2	134.6	228.3	121.8
85/86	207.9	97.4	261.4	150.8	250.8	140.2	233.3	122.8	247.0	136.4	233.3	122.7
86/87	215.4	100.7	267.5	152.7	260.0	145.3	241.1	126.4	n.a.	n.a.	n.a.	n.a.
87/88	222.7	103.6	276.9	157.7	264.8	145.7	245.1	126.0	n.a.	n.a.	n.a.	n.a.

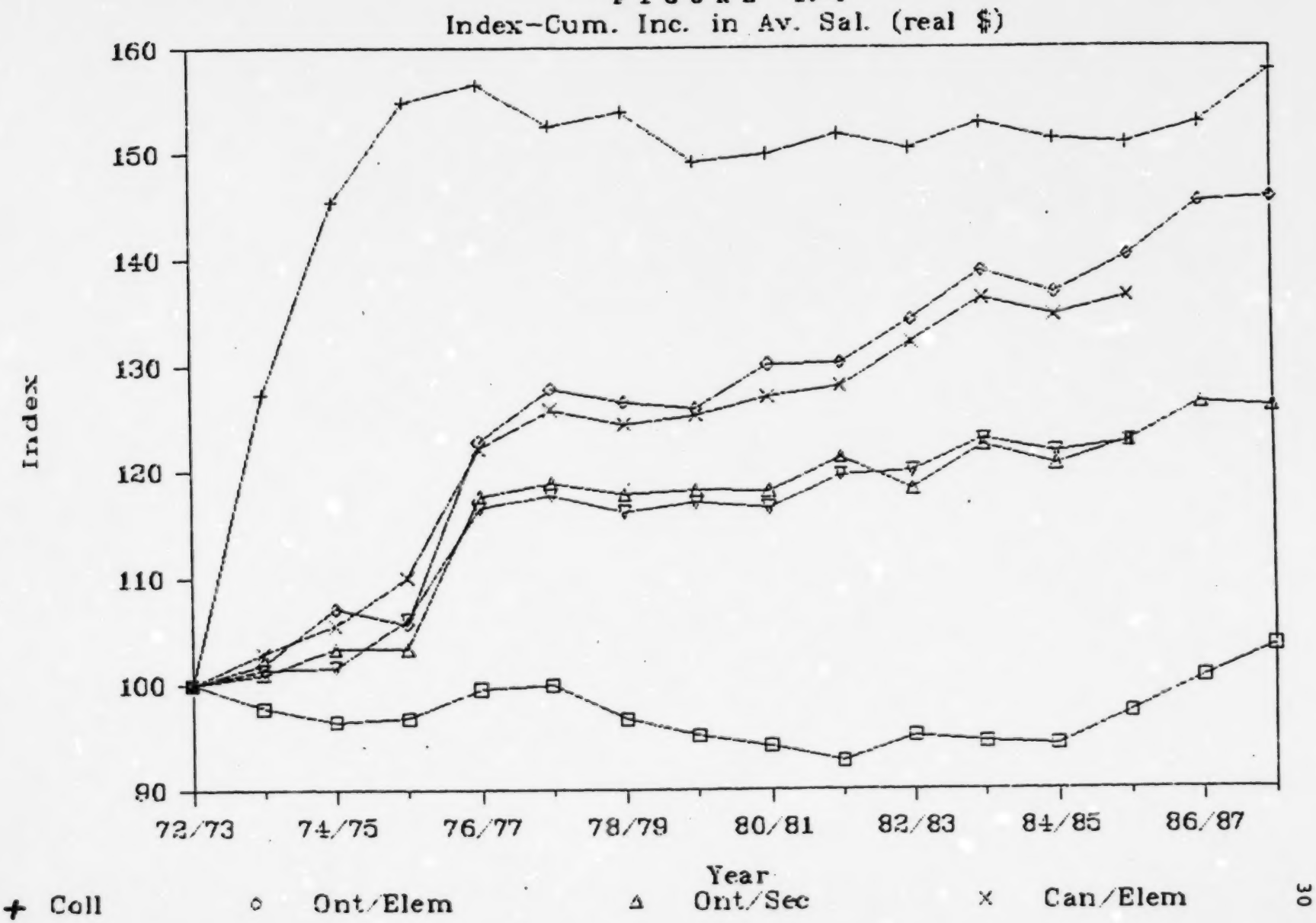
* Alberta figures are included from 1972/73 to 1981/82 and excluded thereafter.

F I G U R E IV-3



Source: From Table IV-4

FIGURE IV-4



Source: From Table IV-4

PART V: SUMMARY

Based on collective bargaining data available from the Ontario Government and taxation statistics from Revenue Canada, the education group performed quite well in terms of increases in average annual earnings. However, it must be emphasized that these two data sets do not provide disaggregated data on the various components of the teaching profession. Collective bargaining data in Ontario include base wage increases only for all education workers (University faculty, elementary and secondary teachers, Community College teaching masters and all support staff working in educational institutions) while taxation statistics aggregate elementary and secondary teachers with University professors and Community College teaching masters.

When the education sector is disaggregated by teaching group, some striking differences emerge. Over the past two decades, Community College instructors have surpassed, quite noticeably, elementary and secondary teachers and University faculty. As well, while University salaries have been higher than either of the other groups over this period, their rate of growth has been the slowest. In real terms, this increase amounted to about 4 percent over the period.

Finally, a comparison of Ontario's elementary and secondary teachers salaries with those for all of Canada reveal a high degree of consistency over the past 15 years with Ontario's average being slightly higher.

PART VI: CONCLUSION

The presentation, to this point, has not offered any conclusions as to why relative wages and/or salaries have changed over time or why differentials existed in the first place. A considerable amount of research has been done to explain differences and trends in wages, salaries and total compensation. The list of explanatory variables used in such studies includes:

i) bargaining power of the union
ii) educational qualifications of the labour force
iii) trade-offs between wages and other forms of compensation
iv) the effects of strikes on wage outcomes
v) the degree of unionization
vi) differences between the public and private sectors in terms of employers

In light of the differences observed in this study, the following thoughts are offered regarding wage trends and differences in wages and salaries. First, the gains in elementary teachers salaries can be attributed, in part, to the increase in formal education levels required of teachers in the mid to late 1960s. Increased educational qualifications represent an investment in human capital which, through its contribution to productivity, is reflected in higher wages. Second, college teachers masters in Ontario have done better than average in terms of wage and salary increases and one suspects that increased qualifications have, at least in part, been reflected in higher salaries. This has likely been reinforced by increased bargaining strength over the past twenty years. Third, the relative gains in the health sector are likely a combination of (a)

rapid unionization in the health area and (b) increased education qualifications to support greater and more sophisticated levels of technology.

To test for the validity of one or all of these as factors contributing to relative wage or salary gains, it is necessary to use an econometric model of the following form:

$$X_i = a + bY_i + e_i$$

where X_i represents a measure of real earnings or total compensation of group i, Y the vector of characteristics associated with the ith group and e_i, a random error term. To highlight public and private sector differences for similar occupations, for example, a lawyer in government versus private practice, the expression $g.D_i$ is added where D is the dichotomous variable (set equal to unity if the group is in the public sector, zero otherwise). Alternatively, one can start with the view that the <u>levels</u> are, and will be, different but look for a widening or narrowing of the differences.

It is important to emphasize that this paper only speculates on the relative wage or salary differences for various occupational groups in Ontario. To provide even probabilistic answers, it would be necessary to carefully develop rigorous, testable economic models. While not impossible, such a task is well beyond the scope of this study.

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